Robust Control for a Class of Dynamical Systems with Uncertainties

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Abstract: In this paper, a new robust control is proposed for a class of dynamical systems with uncertainties. The considered dynamical systems may be nonminimum phase systems. The designed controller requires only input output measurement of the system. First, by using least square approximation technique, nonminimum phase systems are approximated by minimum phase systems. Then, the uncertainty is approximately estimated. Finally, based on the approximate minimum phase system and the estimate of the uncertainty, the robust control input is synthesized. Example and simulation results are presented to show the effectiveness of the proposed algorithm.

Keywords: *Robust control; nonminimum phase systems; uncertainties; approximate inverse systems; least square method.*

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